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American Council for Capital Formation
Center for Policy Research

September, 1993

SPECIAL REPORT

Reform of the Taxation of U.S. Multinationals

INTRODUCTION

The Omnibus Budget Deficit Reconciliation Act of 1993 (OBRA), enacted this past August, increased the tax burden on U.S. multinationals as well as on foreign multinationals operating in the United States. Some experts conclude that OBRA's higher taxes will encourage U.S. multinationals to consider locating new plants and research facilities overseas rather than in the United States. Such an outcome has serious implications for U.S. job growth and living standards. Higher U.S. taxes on foreign multinationals could also have repercussions for U.S. companies operating abroad.

Recognizing the increasing importance of U.S. multinational corporations to U.S. economic strength and competitiveness, the ACCF Center for Policy Research commissioned Gary C. Hufbauer of the Institute for International Economics and Joanna M. Van Rooij of Erasmus University, Rotterdam, to examine key tax issues facing U.S. firms doing business abroad. This special report highlights their study, which Dr. Hufbauer presented at the Center's June forum, *Tax Policy for Economic Growth in the 1990s*. Also included are summaries of responses by panel members Charles J. Hahn, assistant tax director with Dow Chemical Company, and Deborah A. Lange, vice-president, taxation at Oracle Corporation.

U.S. MULTINATIONALS AND ECONOMIC GROWTH IN THE UNITED STATES

The United States is engaged in a long-term competitive game with Europe and Asia. In this context, the United States has two goals: to advance American prosperity as a leading industrial power and to promote an open international system. The U.S. taxation of international income should be reformed to further these goals, according to the study by Hufbauer and Van Rooij.

The modern theory of the multinational firm supplies the basis for reform. The starting point is the recognition that multinational firms engage in two distinct activities: (1) headquarters services and (2) traditional production and distribution activities.

Gary C. Hufbauer

The various headquarters services have special characteristics that help explain why companies become multinational: Most headquarters services can be used throughout the firm; headquarters services cannot be easily licensed to unrelated firms on a profitable basis; and many headquarters services can be efficiently produced only at a single location or in a very few locations.

The other major activities are the production and distribution of goods and services. These activities have their own special features: Although economies of scale characterize production and distribution activities, the economies are not so extensive as for headquarters services; production activities are highly sensitive to the cost and incentive conditions of different environments; rapid feedback from the market is critical for some production and distribution activities; and production establishments buy and sell components and business services among group members to achieve the lowest possible cost to the group as a whole and to supply members with unique goods and services.

The United States benefits twice when U.S. firms operate on an international basis. First, a U.S. multinational firm that has worldwide operations can far more easily spread its expensive overhead costs and thereby lower its average costs. Second, U.S. production abroad acts as a powerful draw on U.S. exports and U.S. export industries pay about 17 percent better wages than the U.S. average. Research indicates that the magnitude of U.S. direct for-

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eign investment in a given country is just as powerful a determinant of U.S. manufacturing exports to the importing country as the size of the country's total imports of manufactured goods from all sources. Unfortunately, rather than seeing the benefits of multinational operations, many policymakers have seemingly been captured by "runaway plant" fears. Foreign investment is thus viewed skeptically, if not as an outright assault on American prosperity. This view is totally at odds with the realities of the U.S. position in the global economy, according to Hufbauer and Van Rooij.

Reforming the Taxation of U.S. International Income

To advance American prosperity, U.S. tax policy should not be fashioned to curtail the global activities of U.S. multinationals. Instead, it should be designed to attract the headquarters activities of multinational firms and to encourage U.S. production and export of goods and services. Toward these ends, the authors recommend ten major changes for taxing U.S. multinational firms on their global activities.

- The United States should adopt a territorial approach to corporate taxation and renounce the taxation of dividend income received by U.S. parent firms from foreign affiliates that are engaged in active business pursuits abroad.

- The United States should repeal the foreign tax credit as it applies to business income.

- The Foreign Sales Corporation (FSC) exemption should be extended to cover U.S. exports of business services. Once the foreign tax credit is repealed, the exemption should be raised to 40 percent of export income.

- The United States should allow firms to allocate all headquarters expense incurred in the United States as a deduction against their U.S. source income. Importantly, headquarters expense includes research and development (R&D) expenditures.

Charles J. Hahn

- The United States should tax, at normal U.S. corporate rates, all royalties and fees paid from abroad for the use of expertise generated in the United States; and it should insist that royalties and fees are a proper business deduction in foreign tax jurisdictions.

- Correspondingly, the United States should allow a deduction for all royalties and fees paid by U.S. firms for the use of expertise generated outside the United States.

- The United States should ensure that all royalty and fee payments are exempt, on a reciprocal basis, from foreign and U.S. withholding taxes.

- In combination with the U.S. taxation of royalty and fee income from abroad, and the repeal of the foreign tax credit, the United States should enact an R&D tax credit of approximately 10 percent, applied to all R&D performed in the United States, not just to incremental R&D.

- The United States should emphasize the Advance Pricing Agreement (APA) mechanism, and it should set up an arbitration procedure for handling transfer pricing disputes.

- The United States should prohibit states from including foreign source income in their tax base via formula apportionment methods (such as the California unitary tax system) or otherwise.

Each of these changes should be considered not in isolation but as part of a larger package. No competitive benefit will come from picking and choosing just those parts of the package that promise to raise more revenue from U.S. multinational firms.

The authors conclude that it is a fallacy to imagine that international business can be taxed more heavily without economic consequences, or to see a contradiction between American prosperity and the worldwide operations of U.S. multinational firms. Instead, the Clinton administration and Congress should shape international taxation on the basis of guiding principles that promote U.S. national interests in today's era of global competition.

A CHEMICAL PRODUCER'S PERSPECTIVE

Making the case for reforming the taxation of U.S. multinationals, Charles J. Hahn, assistant tax director with Dow Chemical, noted that current policies make little sense because of the changes in the global economy. We clearly have the most complex international tax system in the world. In fact, Hahn suggested that the system is compliance proof, meaning no matter how hard we try to

comply, it cannot be done. The system is audit proof, meaning that no matter how hard the IRS tries to audit it, they cannot do it effectively, which leads to all sorts of problems including tax evasion. Complexity also leads to something else, he explained: When Dow has foreign business transactions, there are important U.S. tax consequences that flow from the U.S. system. The investment planners have to consult with the tax experts and by the time all is said and done, there are many projects that Dow cannot accomplish that the company ought to be able to do. The system has simply gotten too complex and that should be a major focus of reform.

In addition to being overly complex, U.S. tax policy towards multinationals puts U.S. firms at a competitive disadvantage vis-a-vis our foreign competitors. A National Chamber Foundation study concluded that compared to our major trading partners our competitive disadvantage ranges from 4 to 10 percent. Dow, for example, pays about 4 percent more in taxes than do its counterparts in the Netherlands.

Multinationals and Job Growth

Multinationals create very good jobs in the United States and they do so in two basic ways, according to Hahn. One is through what Hufbauer and Van Rooij refer to as headquarter activities—basically, the R&D performed in the United States—as well as the marketing and administrative work that creates the tangibles used inside the company. The broader the application of these headquarters activities, the more markets there are for them once they are developed and the greater the return, which in turn means more investment and jobs. And if you are a U.S. multinational, where are those jobs likely to go? They are likely to go where the company has its research facilities, or its critical mass, which, for Dow, is the United States.

As Hufbauer and Van Rooij said, the literature strongly suggests that those manufacturing operations increase, rather than decrease, exports. That has clearly been Dow's experience for several reasons. In the chemical industry, in general, the manufacturing facility must be located near the customer because of transportation costs, tariff and nontariff barriers, the need to provide technical services, and just-in-time delivery. If a chemical industry company wants to serve a customer in a particular market, it must have a local manufacturing presence or it cannot serve the local customers at all.

How does that impact U.S. exports? Dow's foreign manufacturing plant may manufacture ten products and may sell those ten products to its customers. But because Dow has that relationship, the technical service, and infrastructure Dow can also sell forty other products that it manufactures in the United States. In addition, the products this plant manufactures probably use raw materials from the United States. This strongly suggests that if a multinational succeeds in penetrating other markets, it will help to increase U.S. exports. Thus, a competitive U.S. multinational greatly helps the U.S. economy.

Deborah A. Lange

Conclusions

Unfortunately, under the present system, few tax advisors would suggest that a new company or one with a new, potentially profitable product, set up headquarters in the United States. Adopting Hufbauer and Van Rooij's proposals for reforming the tax treatment of U.S. multinationals would go a long way toward eliminating the competitive disadvantage U.S. companies face, Hahn concluded.

A SOFTWARE COMPANY'S PERSPECTIVE

Responding to the Hufbauer and Van Rooij study, Deborah Lange, vice-president, taxation for Oracle Corporation noted that the software industry is an excellent example of an industry where the United States is still the world leader. It is critical that such industries be allowed to maintain their leadership position and that the U.S. government does not, through penalizing tax law and other restrictive trade legislation, force companies to move jobs outside the United States or even restructure to be non-U.S. companies.

Oracle Corporation is the third largest software company in the world, Lange noted, developing and distributing relational database systems and related tools and applications. Its customers range from the U.S. government to the Fortune 1000 companies. It is headquartered in California but over 60 percent of its worldwide revenues come from outside the United States. Oracle does business in most international markets through a local subsidiary where it employs mostly local nationals. Oracle chose this structure for business reasons: its customers like to see a commitment to the local market, and a desire for a long-term relationship.

Oracle performs approximately 80 percent of its R&D in

California, the other 20 percent being developed in the Netherlands, the UK, and Ireland. To date, development has only been performed outside the United States when the development has been to meet local market requirements (such as translation or local accounting practices) or when it is necessary to work closely with a local hardware manufacturer.

Oracle Corporation, like all public companies, has a responsibility to its shareholders who seek a good return on their investment. Therefore, although Oracle would prefer to keep development in the United States and maximize the number of U.S. jobs, Oracle will make whatever business decisions are necessary to maximize the earnings per share of the company, for it is by that standard that a company's success is measured in the market place.

Tax Reform for U.S. Multinationals

The Hufbauer and Van Rooij tax reforms proposal would advance U.S. competitiveness, attract U.S. headquarter activities and encourage U.S. production and export of goods and services. Also these changes would result in simplification of U.S. tax law, which would allow us to focus on our business (we in the tax field would be the first to admit that we have enough other issues to grapple with), Lange stated. However, she noted that she did not believe that the United States will ever adopt these changes as a package. Realistically, it will always be a matter of picking and choosing in order to raise revenue.

A major issue needing redress is that services are, to a large degree, excluded from FSC benefits. The FSC and its predecessor, the DISC, were enacted to help U.S. exporters compete. The FSC is the only export trade incentive included in U.S. tax law and should apply to all exports. However, this is not the case.

For example, the FSC tax regulations allow a U.S. company to benefit from the FSC tax law if a master recording of a record or film is licensed and reproduced outside the United States. However, the regulation takes the position that the same treatment is not available for a master tape of software. Why should the entertainment industry be eligible for a tax benefit that is off-limits for the software industry, Lange queried.

The licensing of software by a U.S. company for reproduction outside the United States is the type of "true export transaction" that Congress intended to qualify as export property. Virtually all of the jobs (including vital R&D activities), capital investment, and training that developed the software are in the United States. The foreign licensing of master software disks allows the U.S. company to realize income reflecting all of the value added by the U.S. software development process. This allows the United States to maintain and develop its R&D efforts and keeps highly skilled jobs in the United States while generating export revenues. The denial of FSC benefits may encourage the movement of R&D activities overseas along with the related high-tech jobs of the future.

Exclusion of software from FSC benefits is a symptom of the failure of U.S. tax policy to move with the times. Because the software industry was not very large in 1984 and 1986 when the FSC rules were put in place it is excluded from the benefits. Tax law should strive for a more level playing field for all industries, new or old, Lange stated.

Consistent, Competitive Policy Needed

One of the greatest frustrations facing any U.S.-based multinational today is the changing face of U.S. tax policy. A prime example is the R&D credit, which is extended from year to year and about which there is no certainty.

Most foreign tax jurisdictions have developed a consistent tax position and they stick to it, Lange observed. Tax rates may change but, by-and-large, the general underlying concepts of taxation remain the same year-to-year and decade-to-decade. This enables companies in these countries to get on with their business, establish a structure that can remain in place for a reasonable length of time, and be relatively untouched by the excesses of tax audits, because the law is not constantly changing and wide open to interpretation. A U.S. multinational cannot be sure of U.S. tax policy for even the shortest period of time and thus cannot concentrate on establishing a workable business structure without the ever-changing face of U.S. tax policy getting in the way. The U.S. government should look to the other countries of the world that have established a workable tax system and stick with it. If U.S.-based companies continue to be hit with constantly changing policies, the actual impact may be quite detrimental; industry may move jobs outside the United States and the United States will lose U.S.-based global competitiveness. Foreign governments may also put into effect the reprisals that they currently threaten. With economic rivals such as the EC and Japan, the United States cannot risk the effect of poor tax policy, Lange concluded.

[1] The proposals and the underlying rationale draw on Gary C. Hufbauer and Joanna M. van Rooij, *U.S. Taxation of International Business Income: Blueprint for Reform* (Institute for International Economics: Washington, D.C., 1992), Chapters 4 and 7.

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SPECIAL REPORT

The Consequences of Population Aging on Private Pension, Fixed Saving, and Asset Markets*

As part of its continuing focus on public policies to increase U.S. saving and investment, the ACCF Center for Policy Research presents a summary of a new study of the long-term implications of tax policy on pension funding by John Shoven, dean of the College of Arts and Sciences at Stanford University and ACCF Center for Policy Research board member, and Sylvester J. Schieber, vice-president of the Wyatt Company.

Background

In the United States the group of people born from 1946 through 1964 have come to be known as the baby boom generation. After the end of World War II, birth rates in the United States jumped to a level significantly above long-term trends and stayed above generally expected levels until the mid-1960s. Because of the high birth rates over this period, the number of people born from 1946 to 1964 comprise an unusually large segment of the total U.S. population. Because of its size, the baby boom generation has had a more significant effect on various facets of the social structure during its lifetime than other comparably aged segments of the population, according to the study by John Shoven, dean of the College of Arts and Sciences at Stanford University, and Sylvester J. Schieber, vice-president of the Wyatt Company.

Given the predictability of the aging process and the evolving patterns of retirement behavior among workers, it is important to consider as far in advance as possible the implications of their retirements on existing social and economic institutions. The two largest sources of cash income for retirees today are Social Security and employer-sponsored tax-qualified retirement plans. Shoven and Schieber observe that policymakers have focused much more on the long-term status of the Social Security system than on the employer-sponsored pension system. As a prelude to their study of private pension fund saving, Shoven and Schieber briefly describe the outlook for the Social Security program.

Social Security Funding and the Baby Boom Generation

For some time, policymakers have been aware that the baby boom generation will pose a particular set of challenges for the Social Security program. Traditionally, the Social Security program in the United States had been run largely on a pay-as-you-go basis. The 1983 Social Security Amendments, anticipating the special burden that baby boomers' retirements would place on workers in the future, included provisions for accumulating a substantial trust fund to prefund some of the benefits promised to the boomers. In other words, the baby boom generation was expected to prefund a larger share of its own benefits than prior generations had prefunded to their own Social Security retirement income. The 1983 amendments also reduced the benefits promised to the baby boom generation by gradually raising the age at which full benefits would be paid to age 67 after the turn of the century.

In the first projections after the passage of the 1983 Amendments, Old Age, Survivors, and Disability Insurance (OASDI) trust funds were projected to be solvent until at least 2063. Actuaries estimated that the trust fund would grow from around $27.5 billion in 1983 to about $20.7 trillion in 2045. However, in almost every year since 1983, the estimates of the accumulations in the OASDI trust funds have been revised downward. The most recent projection, published in April 1993, suggests that the trust funds will accumulate to only about $5 trillion by 2025, and then decline to a zero balance sometime during 2036. At that time the baby boomers will range in age from seventy-two to ninety. Although their numbers will be

* *Prepared for the Association of Private Pension and Welfare Plans—Center for Economic Policy Research joint conference on "Public Policy Towards Pensions," held at the National Press Club, Washington, D.C., October 7-8, 1993.*

declining there will still be significant numbers of them depending on their retirement benefits to meet their ongoing needs.

But as the baby boom generation moves fully into retirement, the projected financing situation for Social Security turns decidedly negative. During the second twenty-five year period reflected in Table 1, when the majority of the baby boomers expect to get the bulk of their lifetime benefits, the projected OASDI outlays exceed revenues by 20 percent. In other words, every bit of evidence available to national policymakers today indicates that Social Security will not be able to provide the benefits currently being promised to the baby boom generation on the basis of inherent benefits promises now being held out to them and existing funding legislation.

Employer-sponsored Retirement Plan Funding and the Baby Boom Generation

Employer-sponsored retirement programs typically operate in a significantly different environment than the federal Social Security program. While the federal government operates its own employer-sponsored retirement programs largely on a pay-as-you-go basis, most state and local governments prefund retirement obligations on some basis, and private employers are required to fund their retirement obligations on the basis of rules laid out in the Employee Retirement Income Security Act (ERISA) and the Internal Revenue Code (IRC).

ERISA became law in 1974. Its purpose was to provide more secure retirement benefits for all the participants in tax-qualified plans. Among other things, ERISA established rules for including workers in plans, rules for vesting or guaranteeing benefits, and requirements that benefits be funded on a scheduled basis.

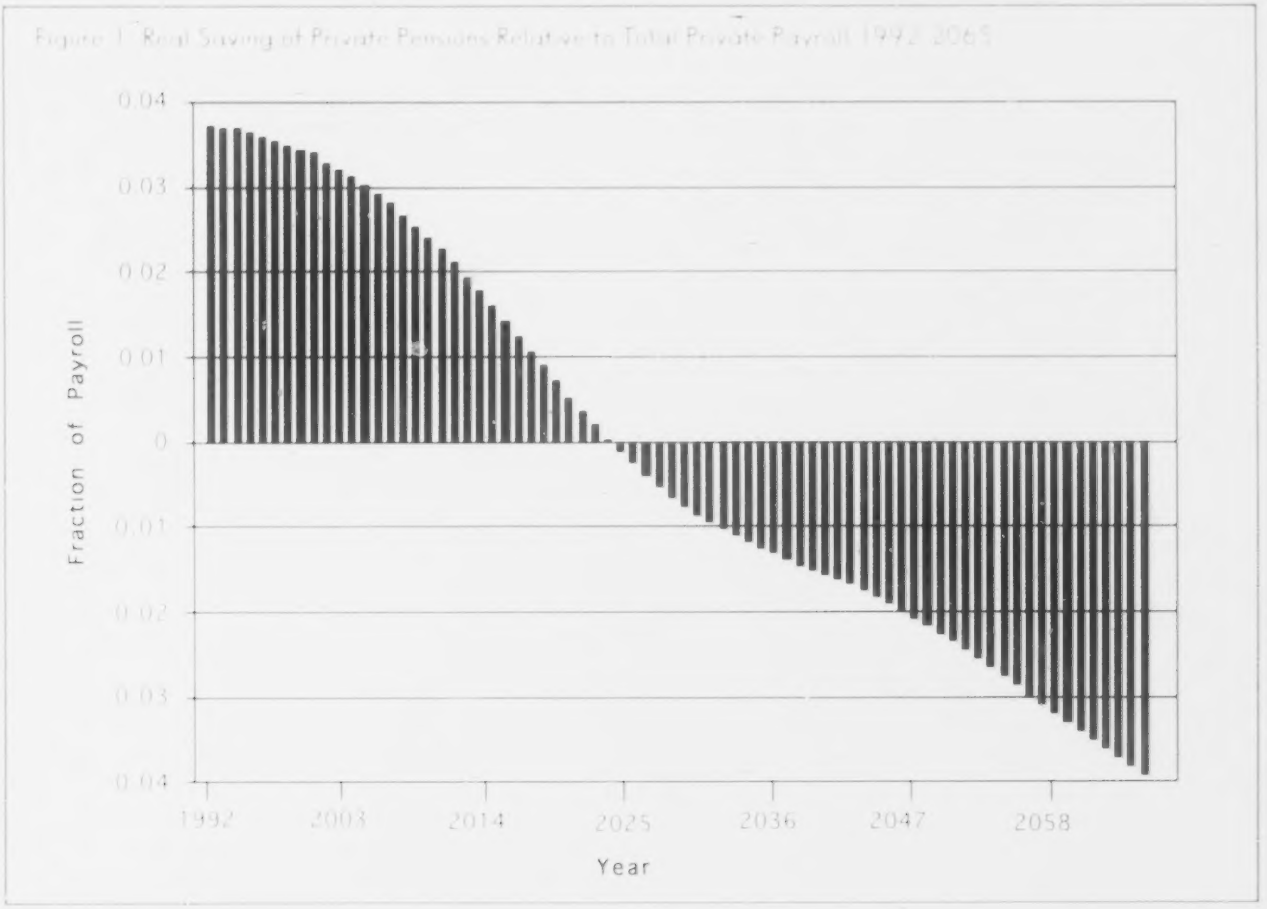
For defined contribution plans, the funding requirements are straightforward. On the date that a contribution to the plan is required by, the plan rules the employer makes a contribution to the plan equal to the obligation. In this case, the employer is not obligated to make any additional contributions for prior periods. The ability of the plan to provide an adequate retirement benefit will depend heavily on the size of the periodic contributions and the investment returns to the assets in the plan.

For defined benefit plans, the funding requirements are somewhat more complicated because defined benefit plans promise future benefits. If a worker enters a firm at age twenty-five and works until age sixty-five and he is retired under the plan for twenty years before dying, his span of life under the plan is sixty years. The essence of ERISA funding requirements for defined benefits plans is that the employer gradually contributes enough to the plan so the promised benefits will be fully funded at the point a worker retires. The annual contribution to the plan is determined on the basis of an actuarial valuation of the plan's obligations and assets, and specific funding minimums and maximums specified in the law. The funding minimums in the law are to assure that employers are laying aside money to pay promised benefits. The funding maximums are in the law to assure that extraordinary contributions are not made to the plan simply to avoid paying federal taxes.

Table 1: Social Security Income and Cost Rates as Projected Under Current Law

Period	Income Rate	Cost Rate	Over or Under (-) Funding as % of Income Rate
1993 - 2017	12.72	11.87	-6.76
2018 - 2042	13.10	15.73	-20.08
2043 - 2067	13.18	17.28	-31.11

Source: 1993 Annual Report of the Board of Trustees of the Federal Old Age and Survivors Insurance and Disability Insurance Trust Funds (April 1993) p. 26.



Recent Tax Code Revisions Affecting Private Pensions

From the passage of ERISA in 1974 until the early 1980s concerns about benefit security held the upper hand in driving federal policy towards pensions, observe Shoven and Schieber. Since 1982, however, policies aimed at limiting tax leakages related to employer-sponsored retirement plans have played the dominant role. While a number of tax law changes have had an effect on defined contribution plans since 1982, the effects on defined benefit plans have been considerably more profound.

In 1982, the Tax Equity and Fiscal Responsibility Act (TEFRA) reduced and froze for a period of time the dollar funding and contribution limits for both defined benefit and defined contribution plans. TEFRA also established new discrimination tests that had the practical effect of lowering contributions for many plans. The next year the Deficit Reduction Act extended the freeze in the funding and contribution limits established by TEFRA. The Tax Reform Act of 1986 again reduced and froze funding and contribution limits for tax qualified plans. The Omnibus Budget and Reconciliation Act of 1987 (OBRA 87) also significantly limited the funding of defined benefit plans. Finally, the Omnibus Budget Reconciliation Act of 1993 (OBRA 93) included provisions that reduce the level of individual employee's compensation that can be considered in funding and contributing to tax qualified plans. The practical effects of the OBRA 93 provisions will be to further limit the funding of employer-sponsored retirement programs.

Outlook for Pension Funding and Net Saving

According to Shoven and Schieber's analysis, the assets of the total private pension system will continue to grow in nominal terms for the next sixty years. However, this growth is almost continuously slowing. For instance, in 1993 the benefits (payouts) of the defined benefit and defined contribution private plans combined are 82.3

percent of total contributions. This means, of course, that there is a net inflow of funds into the total system, even without taking into account the investment return on the $3 trillion asset pool. However, by the year 2006 benefits are projected to be 102.4 percent of contributions and aggregate benefits are expected to continue to outstrip contributions for the entire remaining period through 2065. By 2025 benefits are projected to be 163 percent of contributions.

The importance of this analysis, observe Shoven and Schieber, is that pensions will gradually cease being the major engine of aggregate saving that they have been for the past twenty years or more. The total real saving of the private pension system (projected contributions less benefits plus real inflation-adjusted asset returns) relative to the projected total private payroll in the economy for 1992 to 2065 are shown in Figure 1. Total private payroll is used as the scaling factor simply because it is a readily available by-product of the Social Security forecasting operation. Figure 1 shows that under the authors' assumptions the pension system continues to generate significant investable funds for the American economy for the next twenty years or so. In fact, the decline is very minor for about the next ten years and then it steepens considerably. But by 2024, the pension system is projected to cease being a net source of saving for the economy. In fact, the pension system will then become increasingly a net dissaver. By 2040, the net real dissaving is more than 1.5 percent of payroll and by 2065 the negative saving is projected to reach almost 4.0 percent of payroll. This change of the pension system from a large net producer of saving to a large absorber of saving or loanable funds will likely have profound implications for interest rates, asset prices, and the growth rate of the economy. By the third decade of the twenty-first century, the real assets of the private pension system will shrink and the system will at least temporarily cease being a source of new investment funds for the economy.

Impact of Pension Asset Prices

Another concern raised by Shoven and Schieber is that as pension funds become net sellers, pension assets may fall in price. Under Shoven and Schieber's conservative assumptions, the early part of the third decade of the next century is likely to be the period of time when the pension system begins to be a net seller . This could depress asset prices, particularly because the demographic structure of the United States does not differ that greatly from Japan and Europe, which also will have largely elderly populations at that time. If the asset price effect occurs, it would likely affect all long -term assets. High real interest rates could depress the prices of stocks, bonds, land, and real estate.

Conclusions

The authors stress that public policymakers have completely ignored the long-term implications of tax policy on pension funding in an attempt to minimize the short-term structural imbalances underlying federal fiscal policy.

In addition, the national saving generated by the private pension system can be expected to decline from current levels, gradually for about a decade and then far more steeply. With the conservative assumptions about the rate of return earned by pension assets employed in the study, the pension system would cease to be a source of saving around 2024. ■

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SPECIAL REPORT

Superfund's Impact on Small Firms' Investment Decisions[1]

Anticipating the debate in 1994 over the reauthorization of the Superfund program, the ACCF Center for Policy Research presents new research by William E. Wetzel, Jr. and Jeffrey E. Sohl of the Center for Venture Research at the University of New Hampshire on the impact of Superfund on small business' investment decisions. This report is part of a series of Center research projects in this area, beginning with "Superfund: Assessing the Program and Options for Reform," by Dr. Robert E. Litan of the Brookings Institution (1992).

INTRODUCTION

Small firms have been an important source of jobs and entrepreneurial activity for the U.S. economy since the late 1970s. This study breaks new ground by surveying a group of small potentially responsible parties (PRPs) to assess the impact of Superfund liability on small firms' ability to raise capital, invest in plant and equipment, and create jobs.

Superfund's site-by-site financing mechanism relies on strict, retroactive, joint and several liability. This liability standard means that PRP's are liable for waste disposal that took place before the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or "Superfund," was passed and therefore may have been lawful at the time. Liability is not limited to a PRP's "fair share" of costs based on its wastes. Each PRP may be held liable for the entire cost of cleanup. Thus, Superfund liability can have a major impact on a firm's cash flow and financial health because remedial costs average $25 to $30 million dollars per site.

INVESTMENT AND CAPITAL COST IMPACT

Given the country's reliance on smaller firms for new products and new jobs, Superfund's potential impact on smaller firms' ability to raise capital, invest in plant and equipment, and generate revenues and jobs takes on particular significance. Investing in long-term assets reflects management's expectations for future cash flow and the availability and cost of long-term debt and equity capital.

Respondents were asked whether any planned investments in plant and/or equipment were postponed or canceled as a result of being named a PRP. Based on responses to questions dealing with plant and equipment decisions, it appears highly likely that the long-term impact of PRP status on the ability of smaller firms to raise capital and create jobs will be substantially greater than the short-term impact.

Overall, 39.1 percent of respondents reduced or delayed their investment in plant and equipment as a result of being named a PRP. The investment planned by small firms (those with 0-19 employees) was even more significantly affected; almost half of these respondents canceled or postponed investment. This provides evidence that the size and uncertainty surrounding PRP liability concentrates management's attention on short-term survival rather than long-term growth. Creditors and equity investors will likewise be more concerned about survival than growth. Until final PRP liability is established, smaller firms will be obliged to conserve scarce resources to ensure survival, thereby foregoing the investment that leads to long-term growth.

Required rates of return on capital investments (hurdle rates) reflect management's perceptions of the availability and the explicit cost of long-term debt and equity capital; increased capital costs tend to reduce investment. Respon-

[1] This study was sponsored by the ACCF Center for Policy Research in cooperation with the National Federation of Independent Business. The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to enhance the public's understanding of the need to promote economic growth through sound tax and environmental policy. Copies of the complete study by Professors Wetzel and Sohl may be obtained from the ACCF Center for Policy Research, 1750 K Street, N.W., Suite 400, Washington, D.C. 20006; 202/293-5811.

dents were asked about the effect of potential Superfund liability on the expected rates of return required from new investment projects. Approximately 26 percent of the firms reported increased capital costs as a result of becoming a PRP.

It appears that respondents dealt with the impact of PRP status on investment decisions partly through increases in required rates of return and partly through more subjective decision criteria. In any event, the effects of the burden of PRP status will be manifested over an extended period of time as the consequences of delayed capital investment impact the competitive position of smaller-firm PRPs. With 39.1 percent of respondents delaying capital spending, the long-term effects are likely to exceed the short-term effects by a substantial margin.

ABSORPTION OF MANAGEMENT TIME

More than 50 percent of respondents devoted from 1 to 5 percent of senior management time—roughly one business day per month—to Superfund-related issues during the last five years. Another 35 percent reported spending more than 5 percent of senior management time on Superfund issues. Thus, PRP status had a significant impact on senior management time for 87 percent of respondents. This question attracted a 98 percent response rate, the highest response rate of all survey questions. As is true of delayed or canceled capital expenditures, the adverse consequences of management attention diverted to PRP issues will be felt over an extended period of time.

IMPACT ON BANK CREDIT

Nearly 40 percent of the survey respondents reported that the terms under which they received bank credit became harsher after they became PRPs. Their bankers typically did not respond to the increased risk of lending to PRP accounts by raising interest rates (the explicit cost of capital), but instead by imposing terms and conditions designed to reduce credit risk exposure. These terms and conditions are not cost-free to borrowers, the survey authors note. They represent implicit costs that in indirect, nonquantifiable ways impose constraints on management's ability to make otherwise optimal business decisions and/or attract capital from other sources.

SUPERFUND'S STRUCTURE

Almost 70 percent of survey respondents felt the major burden of Superfund was the current liability system for determining a firm's payments. In contrast, only 16.4 percent cited cleanup standards as the major problem and still fewer (14.8 percent) cited the remediation (cleanup) process itself as a problem. Under the current liability system, determining final PRP liability is an extended and expensive process. By some estimates, as much as seventy-five cents of every dollar of Superfund-related expenditures is consumed by legal and consulting fees.

In the space provided for comments on the questionnaire, respondents expressed a sense of outrage at the perceived unfairness of strict, retroactive, joint and several liability, rather than concerns for the impact of PRP status on business projects.

Small-firm PRPs have identified the present liability system as the dominant Superfund problem. From their perspective, equitable and expeditious determination of final Superfund liability should be the primary goal of modifications to the implementation of Superfund.

SURVEY RESPONDENTS

Superfund's impact on small business was estimated by surveying a group of 5,000 small firms that had been designated PRPs. A total of 520 usable surveys were returned, yielding a response rate of 10.4 percent. Firms that did not return the questionnaire were mailed follow-up postcards to see if their major Superfund concerns were similar to those of the survey respondents.

The responding firms comprise a diverse geographical distribution with the principal place of business representing 45 states and 430 zip codes. The overwhelming majority of these small firms are organized as corporations (68 percent) or sub-S corporations (21 percent), with the remaining firms being either sole proprietorships or partnerships. Approximately half of these firms claim manufacturing or mining as their major business activity, followed by wholesale or retail trade and services. Thus, the firms in the sample are a geographically diverse sample of small firms from industries that are typically associated with a reasonable probability of at some point being named a PRP under existing Superfund legislation.

CONCLUSIONS

This study does not suggest that PRP status has an immediate and devastating impact on smaller firms. The findings do support the conclusion that being a PRP tends to reduce investment, raise capital costs, and divert senior management from the goal of long-term growth to short-term survival. However, PRP status may have a significant impact on the long-term ability of small firms to continue their role as an important job-generating engine of the U.S. economy. ■

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AMERICAN COUNCIL FOR CAPITAL FORMATION
CENTER FOR POLICY RESEARCH

SPECIAL REPORT

June, 1994

Corporate and Consumption Tax Incidence In An Open Economy

by Arnold C. Harberger

The ACCF Center for Policy Research is pleased to announce that UCLA Professor Arnold C. Harberger has been named the John J. Byrne Fellow of the ACCF Center for Policy Research. Mr. Byrne, a member of the board of the American Council for Capital Formation, is a prominent business leader and philanthropist. Professor Harberger, the widely recognized "dean" of public finance economists, is a member of the board of the ACCF Center for Policy Research.

As the John J. Byrne Fellow at the ACCF Center for Policy Research, Professor Harberger has undertaken significant new research on the incidence of the corporate income tax (CIT) and value-added tax (VAT) in an open economy where capital can flow freely across international borders. This work extends Professor Harberger's seminal analysis of the corporate tax incidence which has served as the foundation for much of the modern research on the incidence of the corporate tax burden. These new findings will be invaluable as the policy debate about the incidence of consumption taxes versus income taxes accelerates in Congress, the press, and the private sector.

Corporate Tax Incidence

The best way to visualize the incidence of a tax is to think of it as a "wedge," Professor Harberger observes. For example, taxes on cigarettes, liquor, and telephone calls introduce a wedge between the price paid by the buyer and the price that is received by the seller. In the simplest textbook example involving supply and demand for just one commodity, adding a tax causes the price to go up for the buyer and down for the seller. That is, the burden of the tax is divided between the buyer and the seller. In more complicated situations, the concept of the wedge remains equally valuable, but the ramifications of inserting that wedge extend beyond the simple case just described.

For example, when a 50 percent corporate income tax is inserted into a previously tax-free country with no such tax on the non-corporate sector, the rate of return in the two sectors will eventually be equalized because suppliers of corporate capital will not be content to earn a return less than that received by suppliers of noncorporate capital. Capital moves out of the taxed sector and into the untaxed sector, leading to a situation in which the gross rate of return goes up in the taxed sector (because the corporate capital stock is smaller) and the general rate of return in the untaxed sector goes down (because its capital stock is now larger). After-tax returns are equalized again and the government now receives tax revenues. Thus, whatever burden is being borne by corporate capital will be borne by all capital, not just the capital that is in the corporate sector.

Prior to the development of general equilibrium analysis, in which Professor Harberger was a pioneer in the 1960s, economists maintained that part of the corporation income tax was borne by labor, part by consumers, and part by shareholders (or by capital). That led to the thinking that the worst that could happen is that capital would bear the entire tax, Professor Harberger observes. In contrast, general equilibrium analysis leads to the conclusion that capital can bear less, an equal amount, or more than the full burden of the corporate income tax.

Tax Incidence in a Small Developing Country

Setting the stage for his analysis of a large country such as the United States, Professor Harberger begins with a simple example of the incidence of a corporate income tax in a small, developing country. He notes that when we speak of corporation tax incidence in an open economy, we are considering two major links between this economy (the one where the tax change is taking place) and the rest of the world. The first is the capital market, linking the rates of return to capital here and in the rest of the world. The second is the market for tradable goods, linking their prices in this market with those that prevail abroad for the same goods. The example also assumes that the rates of return to capital are governed by a worldwide market wherein the after-tax rates of return to capital in the principal world centers tend to be brought to equality.

Professor Harberger sets up four sectors—corporate tradable (manufacturing), corporate nontradable

(transport and public utilities), noncorporate tradable (agriculture) and noncorporate nontradable (services and housing). A small developing country is one in which the return on capital lies beyond its influence. Thus, putting a tax on the income from corporate capital would simply lead to adjustments whereby less capital would be at work in that country.

Once we realize that the presence of the tax implies that significantly less capital will be combining with the same amount of total labor (in the small developing country), we should not be surprised that the equilibrium real wage has to be lower. But there is an additional and more critical reason (above and beyond simple capital-labor substitution) why labor's wage must fall. This is because of the need to compete with the rest of the world in the production of manufactures (corporate tradables). The tax is a wedge that has been inserted into the preexisting cost structure. The prices of corporate tradable products cannot go up because they are set in the world marketplace; the after-tax return to capital cannot go down (except transitorily), because capital will not be content to earn less in the small developing country than abroad. Some element of cost has to be squeezed in order to fit the new tax wedge into a cost structure with a rigid product price at one end and a rigid net-of-tax rate of return to capital on the other. The only soft point in this cost structure is wages. If they do not yield, the country will simply stop producing corporate tradables. If the country indeed continues to produce such goods, then wages must have yielded—by just enough to absorb the extra taxes that have to be paid (see Table 1, panel A).

If the after-tax rate of return to capital does not change and the price of the product does not change, and wage costs, per unit of product, are reduced by exactly enough to pay the newly inserted tax, then the activity will be able to survive, even in the presence of the tax. But it is not consistent with market processes for wages (of any given kind of labor) to go down drastically in one sector and to just stay the same in the rest of the economy, Professor Harberger states. The post-tax equilibrium will not come about instantaneously, but when it does finally emerge it should be characterized by equal pay for equal work, for each type of labor, no matter in what industry that work is performed.

Table 1 Small Developing Country

Price Formation Before and After Corporation Tax is Imposed

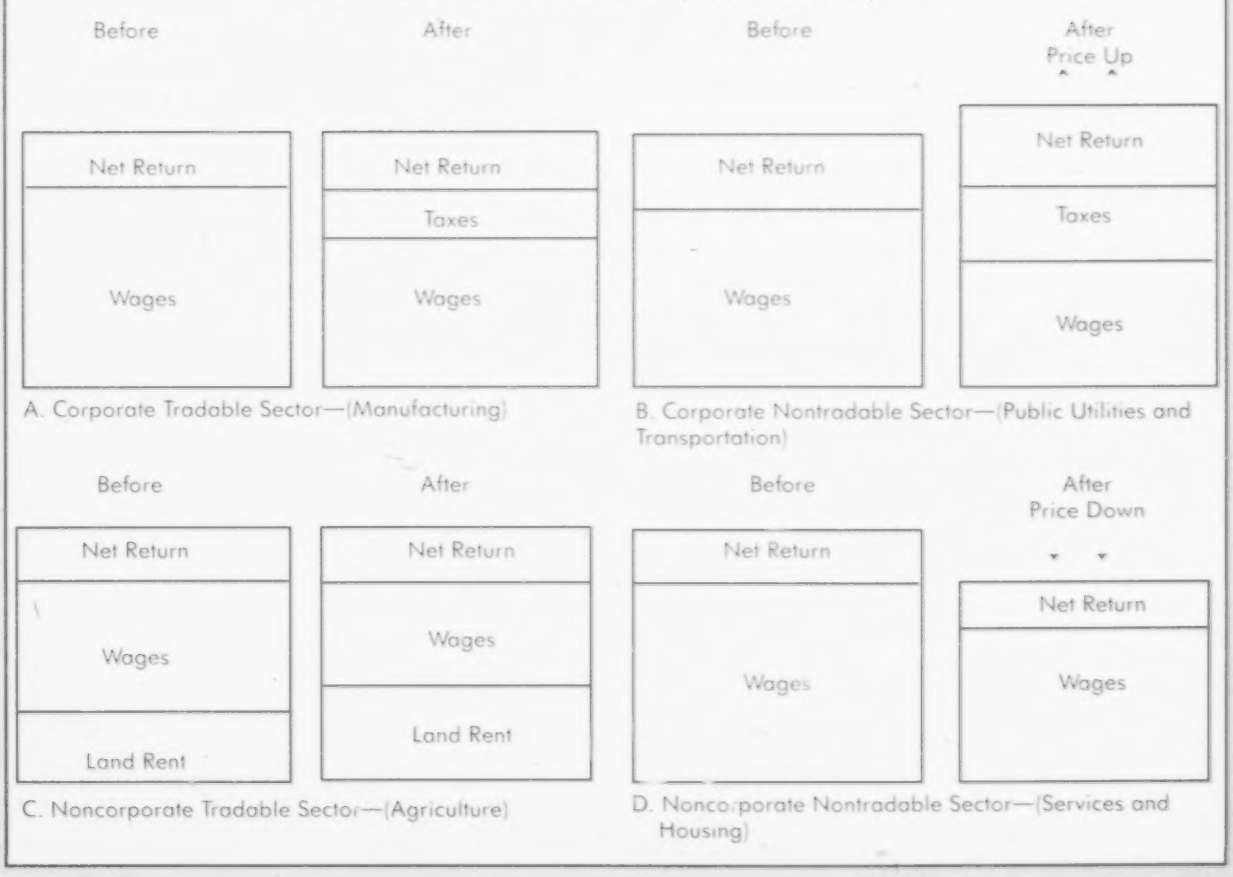


Table 1 presents a visual picture of price formation in the four sectors, before and after the tax is imposed. The significant story here is that labor in manufacturing bears exactly the full burden of the tax in manufacturing. If this means a fall of 10 percent in real wages, so be it. That fall, however, extends to the entire labor force. In public utilities and transportation, this fall in wages is matched (or more than matched if Sector B is more capital-intensive than Sector A) by tax payments to the government. (The more-than-matching part is passed on to consumers of the sector's product.) Put another way—labor's loss in manufacturing is exactly equal to corporation income tax collections from manufacturing. All other labor bears losses that match those of labor occupied in manu-facturing. The manufacturing sector is invariably much larger, relative to the total corporate sector than is the manufacturing labor force relative to the total labor force. Plausible orders of magnitude are one-half for the former fraction and one-fifth to one-fourth for the latter one. Using these numbers we would have labor bearing 2 to 2 1/2 times the burden of the corporation income tax in a typical developing country.

An Exploration of the United States' Case

The most significant feature that distinguishes the case of the United States from that of a small developing country is the relative importance of the United States in the world capital market. There was a time, during the years following World War II, when the United States may have accounted for more than half of the total capital stock in the non-Communist world. Today, the fraction is considerably less, probably more like 30 to 40 percent. But this is still a large fraction, and it signifies that disturbances originating in the United States will almost automatically affect the equilibrium of the world capital market.

To address the case of the United States, Professor Harberger presents an exercise in which, owing to the capital market consequences of a U.S. CIT, world rates of return to capital fall, leading to a loss by owners of capital worldwide that is equal to what the U.S. government collects from the tax. Thus it is fair, in a sense, to say that owners of capital worldwide bear the full burden of the tax. But this inference is misleading because the mechanisms described in the preceding paragraphs are also at work. In particular, Professor Harberger concludes that labor's wage in the United States must fall very sharply in order to absorb the tax wedge being inserted into the price structure of that part of the corporate tradables sector where final products are substantially homogenous (e.g., steel, electrical wiring, powdered milk) and whose prices are basically set in the world market (see Table 2). This wage fall is likely to mean that labor will bear 2 to 2 1/2 times the full burden of the U.S. corporation income tax. Who benefits as a consequence of this huge burden on labor plus the additional amount borne by capital located in the United States? Mainly, it is consumers of the products of the noncorporate, nontradable sector (whose prices unequivocally fall as both wages and net returns decline), and the owners of agricultural land whose economic rents rise to reflect both the fall in wages and that in the net rate of return.

Professor Harberger's analysis of the United States' case is framed as if there were no existing CIT anywhere, and then a 50 percent CIT were inserted into the United States. This brings out the essence of the equilibrating process very sharply but it is not an experiment likely to be conducted in the real world. In the real world what we see is changes in tax rates in one or several countries. This analysis applies intact, he concludes, when corporation income taxes are changed in any one country.

Table 2 The United States Case (Tax Imposed Only in U.S.)

Price Formation Before and After Tax is Imposed

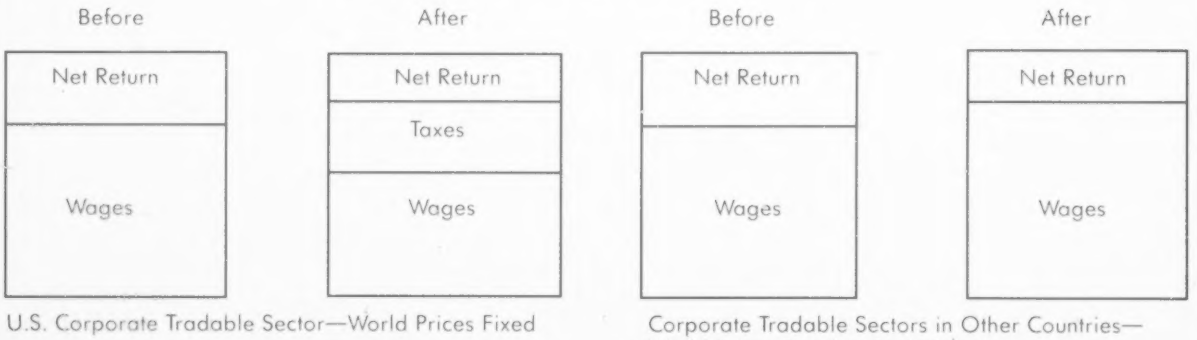
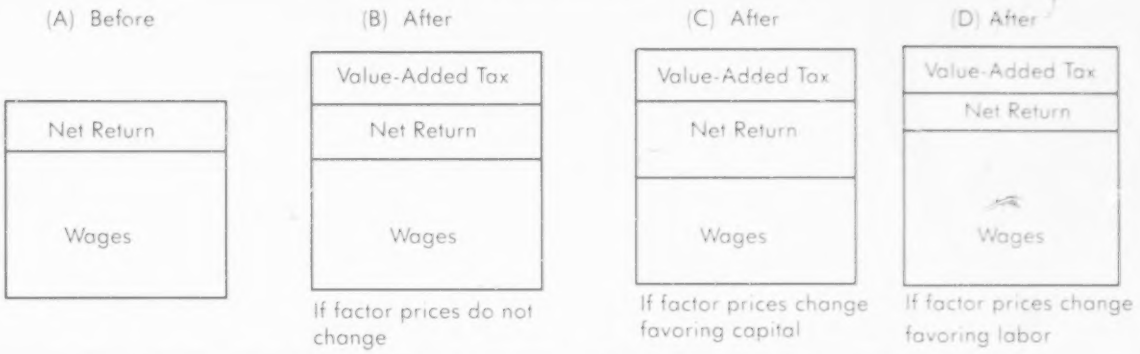


Table 3 The Case of a Value-Added Tax

Price Formation Before and After Tax is Imposed



Incidence of a Value-Added Tax

Professor Harberger also examines the incidence of a broad-based consumption tax using the same analytical framework. As before, the imposition of the VAT, in this case, inserts a wedge between the prices paid by buyers and the prices received by sellers. A major difference between the case of a corporate income tax and a VAT is that the latter can be reflected easily in the final product price. This is true whether the products are nontradable or tradable, or whether their prices are totally fixed in world markets or can vary. Border tax adjustments, through which the VAT is added to the price of imports (and deducted from exports) permit a country's price level to be above the world price level. Professor Harberger illustrates this with the example of an above-ground swimming pool, in which, assuming a 15 percent VAT, the water level of the pool is 15 percent above the water level of the rest of the world (see Table 3).

In contrast to the incidence of a CIT, the safety valves through which the tax wedge caused by a VAT work their way through in the price structure is simply the price paid by consumers. This does not mean that a VAT has no effect on factor prices. Table 3 illustrates three possible scenarios if the U.S. imposes a VAT. In the first instance, a U.S. value-added tax just adds to the price paid by consumers, leaving factor prices unchanged (see panel B). In the second case, wages fall slightly and the rate of return rises (see panel C). In the third instance, the net return to capital falls and wages rise (see panel D). But in all cases, the rise of the price is basically sufficient to cover the value-added tax and what happens between wages and net returns to capital is sort of a secondary story, not the primary story.

The primary story is that the value-added tax will cause the United States price level to rise above that of the rest of the world. That is the way the wedge is reflected and while it is going to be borne by U.S. consumers, it does not have the huge ramifications on factor prices of the corporation income tax in an open economy.

Conclusions

If U.S. labor bears a burden equal to 2 or 2 1/2 times the revenue proceeds of the U.S. corporation income tax, it might be attractive to consider a unilateral reduction of the U.S. CIT with the aim in mind of generating a positive impact on U.S. wages, Professor Harberger states. As long as the rest of the world does not follow the U.S. in its reduction of the CIT, the contemplated benefits to labor will in fact ensue. The tantalizing truth, however, is that the ultimate incidence effects of, say, a 10 percentage point reduction in the U.S. CIT, will not be determined in Washington but in the other major capitals of the world, as they decide whether or not to follow Washington's initiative in reducing this tax.

In contrast, if the United States were to implement a VAT, which more than half of the world already has, and simultaneously lower individual and corporate income tax rates by a moderate amount, it seems unlikely that the rest of the world would follow. Such a change has the potential to increase both investment and wages in the United States. ❖

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to enhance the public's understanding of the need to promote economic growth through sound tax and environmental policies. For more information,contact the ACCF Center for Policy Research, 1750 K Street, N.W., Suite 400, Washington, D.C. 20006; 202/293-5811.

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AMERICAN COUNCIL FOR CAPITAL FORMATION
CENTER FOR POLICY RESEARCH

SPECIAL REPORT

August, 1994

Do Households Appreciate Their Financial Vulnerabilities? An Analysis of Actions, Perceptions, and Public Policy*

The ACCF Center for Policy Research is pleased to announce that Stanford University Professor B. Douglas Bernheim has received the 1994 ACCF Center for Policy Research "Fellowship for the Study of Personal Saving." Dr. Bernheim's research is being made possible by a major grant from The TCW Group, Inc., a leading investment management company. Additional financial support was provided by the Investment Company Institute; Merrill Lynch; Pierce Fenner & Smith, Inc.; Securities Industry Association; Dean Witter; Discover & Company; National Association of Securities Dealers, Inc.; Prudential Securities, Inc.; and the J.L. Kirkpatrick Foundation for Pension Actuarial Education and Research. Professor Bernheim is also a member of the board of directors of the ACCF Center for Policy Research.

Introduction

Low rates of saving in the United States have perplexed economists and challenged policymakers for more than a decade. Despite widespread agreement that Americans save too little, both from an individual and a social perspective, there is little consensus concerning the appropriate policy response, according to Professor B. Douglas Bernheim's new study, "Do Households Appreciate Their Financial Vulnerabilities? An Analysis of Actions, Perceptions, and Public Policy." For the most part, policy discussions have focused on tax incentives, with analysts disagreeing sharply about the efficacy of this approach.

The purpose of Professor Bernheim's study is to provide evidence on the probable effects of different information policies by answering three questions. First, do households understand their financial vulnerabilities? The answer to this question establishes the potential scope for policies designed to raise awareness about the need for saving. Second, how are households likely to respond to the widespread dissemination of Social Security benefit statements? Third, would the provision of limited computational aids significantly alter behavior?

Personal Saving—How Much Is Adequate?

To evaluate the adequacy of retirement preparation by members of any given generation, one must first establish a quantitative standard of adequacy, Dr. Bernheim notes. There are many possible choices. For example, one can evaluate adequacy relative to some notion of "absolute" need (e.g., the poverty level), adequacy relative to prevailing standards of living among the nonelderly, adequacy relative to the standard of living enjoyed by the elderly of a previous generation, adequacy relative to the standard of living enjoyed by the elderly in other countries, or adequacy relative to an individual's own lifetime standards. There is no "right" or "wrong" standard of adequacy; rather, the use of different standards corresponds to different questions about retirement prospects. The appropriateness of a given standard must be judged within the context of a particular issue. A standard that is appropriate in one context may be inappropriate in another. According to Professor Bernheim, the most useful concept of adequacy evaluates a retiree's living standard relative to his or her own preretirement living standard. Using this measure, inadequate saving implies that a household will be forced to accept a lower standard of living during

* This study was sponsored by the ACCF Center for Policy Research, the education and research affiliate of the American Council for Capital Formation. Its mandate is to enhance the public's understanding of the need to promote economic growth through sound tax and environmental policy. Copies of the complete study by Professor Bernheim may be obtained from the ACCF Center for Policy Research, 1750 K Street, N.W., Suite 400, Washington, D.C. 20006; 202/293-5811.

retirement; if the savings shortfall is severe, the decline in living standard will be precipitous. This measure is appropriate in a variety of contexts. Suppose, for example, that the object is to provide households with financial guidance. Since most households wish to avoid sharp declines in their living standard, prescriptions based on equalization of preretirement and postretirement living standards are appropriate. In contrast, it would be entirely inappropriate to base financial recommendations on an absolute measure of adequacy, such as avoiding poverty. The majority of households, upon finding themselves living just above the poverty level after retirement, would conclude that they had saved inadequately. Similarly, those who had achieved lifetime earnings substantially in excess of their parents' might be severely disappointed if their standard of living in retirement did not also exceed their parents'.

"Baby boomers, on average, are not saving enough to achieve even their parents' standard of living during retirement, let along the standard they themselves are enjoying prior to retirement."

Some recent studies, including a 1993 report by the Congressional Budget Office (CBO), attempt to make the case that baby boomers will fare well in comparison to retirees of previous generations. According to the CBO study, baby boomers have significantly higher real incomes and greater accumulated wealth than their parents did at comparable ages. While these findings appear to suggest that baby boomers are on track to match or exceed their parents' standard of living during retirement, caution is warranted for several reasons, Professor Bernheim observes.

First, the CBO's discussion of wealth accumulation focuses on the level of saving, rather than on the rate of saving. In other words, it indicates where households are, without attempting to determine where, or how fast, they are going. This is important, because rates of saving among young workers may have been higher during the late 1950s and early 1960s than in the late 1980s and early 1990s.

Second, the baby boomers' parents earned significantly more during their 50s and early 60s than during their 30s and 40s, in large part because real wages grew rapidly during the 1960s and in the first half of the 1970s. Unless we observe a return to higher sustained real wage growth (which seems unlikely given current rates of saving and investment), baby boomers will benefit from much lower midcareer growth in earnings.

Third, baby boomers may receive less generous pension benefits than their parents. With respect to potential reductions in Social Security, a 1993 study by Professors Alan Auerbach of the University of Pennsylvania and Lawrence Kotlikoff of Boston University found that, under a sustainable fiscal policy, most baby boomers would have a lower standard of living in retirement than their parents. And even if the benefit formulas are unaltered, Social Security will probably replace a smaller fraction of preretirement income for the baby boomers. This follows from the growth of two-earner households, since single-earner married couples receive a pure windfall in the form of the spousal benefit.

In addition, many private companies have taken steps to reduce retirement benefits, partly in response to the increasing complexity of federal regulation. In many instances, these steps have been subtle and indirect. For example, in recent years there has been a dramatic shift from traditional pension plans to 401(k) plans. Baby boomers' pension assets are also invested much more conservatively than their parents' pension assets (due again to the growth of defined contribution pension plans and 401(k)s, which give workers more control over their portfolios). This means that they can expect to receive, over the long haul, much lower returns. Even if they are doing as well at age thirty-five, they are likely to fall far behind by age sixty-five.

Fourth, the baby boomers' parents benefited from an enormous, unexpected increase in housing equity. They experienced both a prolonged period of high inflation that wiped out much of their real liabilities (by reducing the real value of fixed rate mortgages), and a sharp increase in the relative price of housing (most likely driven by baby boom population dynamics). In contrast, baby boomers are unlikely to earn large windfalls on their homes. Indeed, it is generally believed that demographic trends will drive real housing prices down as the baby boomers approach retirement. Similarly, large net outflows from pension funds may depress asset prices, thereby significantly reducing the net worth of baby boomers subsequent to their retirement. It is also doubtful that inflation will significantly erode the value of the baby boomers' liabilities. Even if we experience a

return to high inflation, many baby boomers have opted for adjustable rate mortgages.

Fifth, the baby boomers are having their children later than their parents did. This means that they will have fewer post-child rearing years to accumulate resources for retirement at an accelerated rate. Baby boomers also have fewer children than their parents. This implies that children are currently less of a drain on their income, and that, consequently, the end of child rearing will have less of an effect on their ability to save.

Sixth, baby boomers will live significantly longer than their parents, so their savings need to go further. There is growing evidence that official mortality projections may significantly understate the longevity of those retiring in the next century. New research suggests that if current rates of progress in reducing mortality at advanced ages continue or accelerate, children alive today may live to see ninety or even 100 years on average, Professor Bernheim notes.

Seventh, baby boomers will exhaust a larger fraction of their wealth sending their children to college, both because their children are more likely to attend college, and because the real costs of college have risen. This consideration may be offset to some extent by the fact baby boomers are having fewer children than their parents did.

Certainly, there are some factors that tend to favor the baby boomers, relative to their parents, not the least of which is their larger real incomes at comparable ages. A minority of baby boomers may also receive significant inheritances. However, given the range and quantitative importance of the factors discussed above, it seems evident that baby boomers, on average, are not saving enough to achieve even their parents' standard of living during retirement, let alone the standard they themselves are enjoying, and will continue to enjoy, prior to retirement.

Financial Vulnerabilities

Professor Bernheim uses data from a nationally representative telephone survey, conducted in the fall of 1993 by Luntz Weber Research and Strategic Services for Merrill Lynch, Inc. The survey was administered to 1,209 randomly selected individuals between the ages of twenty-nine and forty-seven (the "baby boom" cohort). The survey contains both a question on target saving, and a question on actual saving. These questions read as follows:

- What percentage of your annual household income do you think you should save for retirement? ("target saving")

	Actual rate of saving	Target rate of saving
Median	5.0%	15.0%
Mean	8.1%	19.2%
Mode	0%	10.0%

- What percentage of your annual household income are you now saving for retirement? ("actual saving")

The response rates for both questions exceeded 98 percent. A comparison of the answers to these questions provides a measure of the self-assessed adequacy of saving, Professor Bernheim advises.

Summary statistics on actual rates of saving (self-assessed) are contained in Table 1. The median self-reported rate of saving for retirement is only 5 percent. Since the distribution of saving rates is skewed (with a small number of individuals reporting very high rates), the mean rate of saving is somewhat higher (8.1 percent). It is particularly notable that the modal self-reported rate of saving is 0 percent: fully 20.9 percent of respondents reported that they save nothing for retirement. This distribution is highly concentrated between 0 percent and 10 percent. Furthermore, 37.1 percent of respondents report saving less than 5 percent of income, and only 19.9 percent report saving more than 10 percent of income.

Table 1 also contains summary statistics on target rates of saving (self-reported). The median self-reported target rate of saving is 15 percent. Once again, the mean rate is noticeably higher (19.2 percent), reflecting the skewness of the distribution. The modal rate of target saving is 10 percent; slightly more than 30 percent of respondents believe that they should put away 10 percent of income toward retirement. Fewer than 1 percent of respondents said they did not need to save anything for retirement; only 2.3 percent reported a target saving rate less than 5 percent; only 11.6 percent believed they should be saving less than 10 percent of income; and a sizable minority of respondents—28.0 percent—named a target saving rate of 20 percent or more.

The contrast between actual saving and target saving is striking. The data clearly indicate that baby boomers recognize the need to save more, and that, in the aggregate, they appreciate the extent to which they ought to increase their saving. The median baby boomer believes that it would be appropriate to triple his or her

rate of saving for retirement—a conclusion that coincides almost exactly with that of Professor Bernheim's earlier research.

Dr. Bernheim's findings show that current saving by members of the baby boom generation is seriously inadequate. The typical baby boom household is saving at one-third the rate required to finance a standard of living during retirement comparable to the standard of living enjoyed before retirement.

Using the Luntz Webber/Merrill Lynch survey data, Dr. Bernheim finds that while respondents indicate some awareness of relative financial vulnerabilities, they also exhibit an unrealistic degree of optimism. Within the lowest adjusted-wealth quartile—a group that is poorly prepared by any objective measure of adequacy—more than half regard their personal finances as secure. Many members of this population acknowledge that they save significantly less than they should, while simultaneously maintaining an unrealistic level of optimism concerning personal finances and retirement prospects. For at least this fraction of the population, and possibly for others as well, the failure to save adequately may well result from self-deception.

Table 2 Asset Accumulation and Confidence in Social Security

Individual's expectation about future social security benefits	Wealth/earnings ratio		
	Age 30	Age 47	Change
No future benefits	0.320	1.365	1.045
Lower future benefits	0.283	0.846	0.563
Same future benefits	0.367	0.455	0.088

The Impact of Information Policies

As of 1995, the federal government will provide a "Personal Earnings and Benefit Estimate Statement" to older workers. In subsequent years, the Social Security Administration will send these statements automatically to younger workers as well.

However, the Luntz Webber/Merrill Lynch survey results suggest the federal government's plan to distribute Social Security benefit statements could discourage personal saving. First, most recipients of these statements would be pleasantly surprised by the apparent generosity of the system. Second, the benefit statements may enhance people's confidence that benefits will not be reduced or eliminated. Professor Bernheim concludes that the benefit statement policy might depress personal saving because virtually all saving among the baby boom generation is undertaken by those who have little or no confidence in the Social Security system (see Table 2). As of age thirty, there are only minor differences between the wealth-to-earnings ratios for those who expect no Social Security benefits, those who expect lower benefits than current retirees, and those who expect the same benefits as provided under current law. However, by age forty-seven (the maximum age of respondents in the data sample) the differences are enormous. The estimates indicate that, over the intervening seventeen years, those with the least confidence in Social Security (i.e., those who say they expect to receive no benefits) accumulate incremental wealth equal to slightly more than one year's worth of earnings.

Conclusion and Policy Recommendations

The survey results also show that individual's saving behavior responds to vague and unquantified senses of security and urgency, rather than to quantitative (measured) perceptions of financial needs. Since the government policies currently under serious consideration may well prove ineffective for raising personal saving (in fact, the distribution of Social Security benefit statements may reduce personal saving), more ambitious information policies—including promotion and the provision or facilitation of explicit advice and guidance—deserve serious consideration, Professor Bernheim concludes. ❖